**Expenditures Approach to Calculating GDP**

 In this approach GDP is calculated as the sum of four categories of expenditures on output. These are:

**Gross Private Consumption Expenditures(C)   
Gross Private Investment (I)   
Government Purchases (G)   
Net Exports (X - M)**   
  
**GDP = C + I + G +NX**

**Private Consumption Expenditures (C):**

This consists of all goods and service purchased by households. This is broken down even farther into [services](http://www.econport.org/content/handbook/NatIncAccount/ImportantTerms.html#S), [nondurable goods](http://www.econport.org/content/handbook/NatIncAccount/ImportantTerms.html#NG), and [durable goods](http://www.econport.org/content/handbook/NatIncAccount/ImportantTerms.html#DG).

* As interest rates increase, people begin to save more and consume less in relation to their spending/saving habits with lower interest rates, so C decreases.
* When taxes go down, people tend to have more income, so C increases.
* When income increases, C increases.

This is the largest category and accounts for about two-thirds of the GDP

**Investment (I):**

**Total Investment (I) = Fixed Investment + Inventory Investment + Residential Investment**

Eventually all capital begins to wear out because of use or may even become technologically obsolete. This process is called depreciation which is the decrease in the capital's value. Net private investment is gross private investment minus depreciation. Net private investment is important because it gives economists a clue to a possible increase to a certain capacity that a country can produce.    
  
There are two types of investment: fixed investment and inventory investment. **Fixed investment** is the purchase of capital goods such as robots, machines, and factories. Raw materials ([intermediate goods](http://www.econport.org/content/handbook/NatIncAccount/ImportantTerms.html#IG)) are **NOT** included in investment. **Inventory Investment** is the change in inventories such as goods awaiting sale on store shelves, or raw materials which have yet to be assembled into final form or sold.   
  
**Positive** inventory means that inventory is rising, while **negative** inventory means that inventory is falling.   
  
**Residential Investment** is the purchase of new residential homes by the household sector.

**Government Purchases (G):**

This accounts for the total expenditures on new goods and services by the local, state, and federal government. Transfer payments are not included in government purchases, but rather find their way to consumption or investment. These payments include the spending of the government on welfare projects. These are programs and benefits that are awarded to individuals who do not need to work for it.

**Net Exports (NX = X - M):**

The value of a country's total exports minus its total imports   
  
X = foreign country's spending on the country's goods   
M = Country's spending on foreign goods   
  
If (X - M) is positive, then X > M resulting in a [trade surplus](http://www.econport.org/content/handbook/NatIncAccount/ImportantTerms.html#TS)If (X - M) is negative, then X < M resulting in a [trade deficit](http://www.econport.org/content/handbook/NatIncAccount/ImportantTerms.html#TD)If (X - M) is zero, then X=M results in a [trade balance](http://www.econport.org/content/handbook/NatIncAccount/ImportantTerms.html#TS)

[View an Example](http://www.econport.org/content/handbook/NatIncAccount/CalculatingGDP/Examples.html)

**GDP and NDP**

**Net Domestic Product (NDP)** is GDP minus depreciation. Since depreciation is sometimes hard to account for, GDP is often used when calculating national income.

**NDP = GDP - total capital depreciation**

# Examples of Calculating GDP

Here, we will show you the two different ways of calculating GDP using the information from different factors given in Table 1.

### Using the Expenditures Approach

#### Table 1: Expenditures

|  |  |
| --- | --- |
| Transfer Payments | $54 |
| Interest Income | $150 |
| Depreciation | $36 |
| Wages | $67 |
| Gross Private Investment (I) | $124 |
| Business Profits | $200 |
| Indirect Business Taxes | $74 |
| Rental Income | $75 |
| Net Exports (X-M) | $18 |
| Net Foreign Factor Income | $12 |
| Government Purchases (G) | $156 |
| Household Consumption (C) | $304 |

By using the data in Table 1 we can calculate the GDP using the expenditures approach. As you can see, the table contains more data than is necessary so you have to look for the parts which make up the expenditures approach to calculating GDP.  The necessary data is highlighted within the table.  
Remember:

**GDP = C + G + I + (X - M)**

In this case the C is represented by Household Consumption which is $304.   
The G refers to Government Spending which is $156.   
 I is gross private investment and is $124.   
 (X - M) is the net exports and in the table is shown to be $18.   
  
Therefore:

**GDP = $304 + $156 + $124 + $18**

**GDP = $602**

Source: http://www.econport.org/content/handbook/NatIncAccount/CalculatingGDP

# Income Approach to Calculating GDP

This approach calculates National Income, NI. NI is the sum of the following components:   
  
**Labor Income (W)  
Rental Income (R)  
Interest Income (i)  
Profits (PR)**  
  
**NI = W + R + i + PR**

**Labor Income (W):**Salaries, wages, and fringe benefits such as health or retirement. This also includes unemployment insurance and government taxes for Social Security.   
  
**Rental Income (R):**This is income received from property received by households. Royalties from patents, copyrights and assets as well as [imputed rent](http://www.econport.org/content/handbook/NatIncAccount/ImportantTerms.html#IR) are included.   
  
**Interest Income (i):**Income received by households through the lending of their money to corporations and business firms. Government and household interest payments are not included in the national income.   
  
**Profits (PR):**The amount firms have left after paying their rent, interest on debt, and employee compensation. GDP calculation involves [accounting profit](http://www.econport.org/content/handbook/NatIncAccount/ImportantTerms.html#AP) and not [economic profit](http://www.econport.org/content/handbook/NatIncAccount/ImportantTerms.html#EP).   
  
[View an Example](http://www.econport.org/content/handbook/NatIncAccount/CalculatingGDP/Examples.html#incomeexample)

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### Using the Income Approach

Table 1 also contains the data necessary to calculate GDP using the income approach.

**Table 1: Income**

|  |  |
| --- | --- |
| Transfer Payments | $54 |
| Interest Income (i) | $150 |
| Depreciation | $36 |
| Wages (W) | $67 |
| Gross Private Investment | $124 |
| Business Profits (PR) | $200 |
| Indirect Business Taxes | $74 |
| Rental Income (R) | $75 |
| Net Exports | $18 |
| Net Foreign Factor Income | $12 |
| Government Purchases | $156 |
| Household Consumption | $304 |

In this case we use the formula:

**NI = W + R + i + PR**

**W** is the wages that are represented by $67 in the table.   
Rental income is the **R** and is $75.   
Interest income is **i** and is $150.   
**PR** are business profits and are $200.

Therefore:

**NI = $67 + $75 + $150 + $200**

**NI = $492**

**GDP = NI + Indirect Business Taxes + Depreciation**

**GDP = $492 + $74 + $36**

**GDP = $602**

As you can see, in this case, both approaches to calculating GDP will give the same estimate. This is not always what happens and sometimes GDP will differ slightly when the different approaches are used.